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EDITORIAL

SPECIALISM AS VIEWED BY S. WEIR MITCHELL

In a delightful little book *"Doctor and Patient* published by Lippincott in 1901 S. Weir Mitchell, the distinguished Neurologist and novelist, expressed himself very freely in regard to the benefits and limitations of specialism as follows:

"A final result of the multiplication of the means of research, and the increasing difficulty in becoming expert in the use of many and delicate instruments they require, is the growth of what we call specialties in medicine. The best of us learn to use the ophthalmoscope to look into the eye, the use of the laryngoscope for the larynx, and can at need examine the urine and the blood, but the men must be rare who are as competent to use each and all of these means as persons who devote themselves to single branches of our work. Moreover, the element of time comes in, as well as the element of such constant familiar practice as makes for one man commonplace and easy what for another, who is more generally occupied, is uncommon and unfamiliar. The specialist profits by the fact that his experience becomes enormous and his work advantaged by its definite limitations. On the other hand and nowadays, especially, he is too apt to be one who, after brief hospital work of general character, or without this, takes up, as we say, the eye, ear, throat, and uterine organs. Unless he has had at sometime a large and more varied experience, or unless he is a most unusual man, he is prone at last to lose sight in his prac-

tice of the fact that eye, ear, and womb are parts of a complicated mechanism, and suffer through its general and local disorders. Hence the too common neglect of constitutional conditions, to which are often due the apparent maladies of the organs to which he devotes himself. Moreover in certain of the organs of sense, as the eye, are frequently seen the first signals of spinalor other maladies, and if as too often happens, he sees in some such sign or symptom only the evidence of local trouble, and neglects to look or reason beyond it, he may inflict on his patient the gravest penalties, by depriving him of the chance of early treatment of some serious disease, involving lifelong or even fatal, consequences. This is a criticism on the man and his training, not on the system of specialties which has become invaluable."

ORIGINAL ARTICLES

AMEBIC DYSENTERY WITH SPECIAL REFERENCE TO TREATMENT

By W. A. Wallace, M. D., Spartanburg, S. C.

Amebiasis is probably one of the oldest diseases—Chronic Dysentery being referred to by some of our earliest writers—but it was not until 1875 that Losch observed Amebae in Dysenteric stools, and he suggested this organism as playing a causative role in Dysentery. It remained for Kartulis, in 1885, to call attention to two forms of Dysentery: an endemic form due to the Amebae and an epidemic type due to Bacteria. This distinction of the diseases was generally accepted in 1900 when the etiology of Bacillary Dysentery was fully established. In 1891 Councilman and Lafleur called attention to the striking lesion, or cysts, whenever the Amebae had penetrated the intestinal mucosa; and to these workers we are indebted for the simple but appropriate name, "Amebic Dysentery"

It is certain that there are three distinct groups of Amebae occurring in man:

1. The Parasitic and Pathogenic Group, Entameba Histolytica.

Read before the South Carolina Medical Association, Orangeburg, S. C., April 17, 1924.

2. The Parasitic and non Pathogenic Group, Entameba Coli.

3. The non Parasitic, non Pathogenic, Limex Amebae.

The Entameba Histolytica is the only Entameba which is widely distributed and which is pathogenic to man. From time to time, investigators have discovered apparently new pathogenic Amebae, but in all cases, so far, the different forms have proven to be different cycles of the original organism—Entameba Histolytica.

The Entameba is highly parasitic. It does not develop outside the animal host in nature, and thus far has resisted to a very great extent, all known cultural methods. Recently, Cutler has reported cultivation of Entameba Histolytica on a medium composed of finely divided particles of coagulated egg, suspended in milk. Multiplication occurred only in a small percentage of the culture tubes. From these, he was unable to isolate the Amebae from the contaminating Bacteria, or to isolate the organism which is definitely the off-spring of a single cell.

Thus, you see that the study of the Amebae is one of the most difficult problems with which we are confronted today. There is no doubt that it is a cause of Dysentery, but, so far, growing the organism artificially has been a failure. Baetjer and Sellards succeeded in transferring Amebae

from man to the Caecum of kittens, and produced in these animals, frequent bloody mucous stools, containing the typical Amebae.

Amebic Dysentery occurs abundantly throughout the tropic regions, and is endemic in the temperate zones, only rarely found in the colder climates. The Amebae, both in the motile and encysted forms, leave the body by way of the intestinal tract. Neither of these multiply after leaving their hosts. It was formerly thought that the contamination of water supply was the most frequent source of infection, but more recently, typical Amebae carriers have been found to occur frequently, and, as in the case of Typhoid Fever and Diphtheria, these individuals play an important role in the distribution of this disease. Another similarity to these diseases which is rather striking is the fact that we find individuals carrying Amebae who themselves have never had an attack of Amebic Dysentery. The Amebae is able to penetrate the uninjured mucosa and to burrow its way down into the muscular layer, though it seldom is a cause of perforation; but by getting into the venules of the Caecum, thus entering the portal circulation, it is one of the most frequent causes of Abscess of the Liver. This disease usually starts in the Caecum, or at least, in the upper portion of the Colon, and, as it progresses, frequently involves the full length of the Colon. The lesions have so far never been demonstrated in the Ileum, though it does seem reasonable to suppose that a motile organism that is so resistant to the natural protective agencies of the human body could, by proximity, work its way from the Caecum to the Ileum, and there act as a source of reinfecting the Colon after treatment. This is merely conjecture as a possible explanation for the frequent recurrence of Amebic Dysentery after recognized treatment, though, at the present time, the formation of cysts is the accepted explanation for frequent recurrences.

The incubation period is variable, but it is probably from twenty days to three months. The symptoms may commence suddenly or insidiously; if an attack is untreated, it gradually subsides of itself in the majority of cases; but after an intermission of a few weeks or a few months, typical relapse occurs. It is possible for the Entameba Histolytica to remain latent in the bowel for a remarkably long period. After several relapses have occurred, the symptoms may subside, though frequently the Amebae persist in the stools for months and years; thus the individual becomes a carrier. More often the disease passes into a chronic form, the invading Bacteria gain a firm foothold in the ulcerated areas of the intestines, and chronic continuous Diarrhea develops; Secondary Anemia supervenes, the patient gradually becoming emaciated and exhausted. Lesions of the Appendix from the Amebae are not infrequent, but typical suppurative bacterial Appendicitis is uncommon. There are a few cases on record where the Ameba Histolytica has invaded the Genito-Urinary tract.

Diagnosis is made from the history and from examinations of the stool. The stool should be examined for cystic forms as well as for the motile form. In all cases it is advisable to examine the patient very closely for involvement of the Liver.

In treatment, Ipecac has long enjoyed the distinction of being a drug deadly to the Amebae. This drug has been employed in various ways, as by Mouth and by Colonic irrigations. It has also been employed following Appendicostomy. On account of its nauseous action on the Stomach, Salol coated pills of Ipecac were used for a time, then, later on, Emetin was used and is still enjoying favor. The average dose of Emetin is one grain, once daily, given intramuscularly. In the tropics, the natives more frequently use a member of the family of "Simarubacea," and report success from this in the treatment of Dysentery, provided it is of the Amebic type. A member of this family is the "Castella Nicholsoni," which occurs in Southern Texas and Mexico, and is known as "Bitter Bush."

Relapses from any recognized treatment are frequent. MacAdam reports eighty cases treated, using one and one-half grains of Emetin daily for twelve days—one grain being given hypodermatically and one-half grain by mouth. Eighteen relapses occurred, which, from the literature, seems to be a very good average. For eradication of cysts from carriers, the treatment at present consists of a thorough course of Emetin Bismuth Iodid, given in Salol coated pills, three or four grains daily, at one dose, until a total of thirty-six or forty grains has been given. Even after this treatment, the cysts persist in about one-fourth of the cases.

The one case which I have to report was treated by Ipecac and Quinine, but administered, so far as I know, in an original way; though Dr. Einhorn used a similar method with a different drug in the treatment of Chronic Colitis.

This patient, a man, 29 years of age, unmarried, printer by occupation, complained of Dysentery. Has lived in South Carolina all of his life. The family history is negative, as is his personal history until he became ill with Dysentery in 1912. His stools showed Ameba Histolytica in fairly large numbers. Since the on-set of his illness in 1912, he has taken numerous treatments—Ipecac by Mouth, by Rectum, Emetin by Mouth, by hypodermic, Quinine by Mouth and by Rectum. He has had the ulcers in the Rectum cauterized; he has taken Alcresta Ipecac tablets, number of pills, and he has used oak-bark tea—the latter, I believe, his own prescription. Several of these treatments were given while he was in camp in the recent war. One of these treatments relieved his symptoms for one month, the others for a shorter time. I saw this man in June 1923, at which time he was having six to eight muco-sanguinous stools a day, and showed Amebae in large numbers. He was somewhat emaciated, being about fifteen pounds under his original weight. He was admitted to the hospital on June 7, 1923, and a Rehfuss Duodenal Tube was passed. Several short lengths were used until we had fifteen feet of tubing down the intestine. The tip was then located with the X-Ray, and was found to be in the upper portion of the Ileum, the tube having curled somewhat in the Stomach and Jejunum. He was given thirty grains of powdered Ipecac in a suspension through the tube. This caused considerable nausea, and later, several large watery stools. Another length of tubing, approximately fifty inches long, was hung on at the mouth, and as soon as this was in place, we started regular irrigations. He was irrigated through the tube once daily, with forty grains of Ipecac, in suspension, in the afternoon, and once daily with twenty grains Quinine Bisulphate in Solution in the morning hours. At the end of five days, the tube was cut loose at the mouth and allowed to pass. The tip passed at the end of seven days from the time it was cut loose. This man was discharged from the hospital on June 18, 1923, and so far, up to the present time, he has not had a recurrence of his symptoms; and on repeated examinations of his stool, we have been unable to find Amebae. He did not show any untoward action from the treatment other than the nausea following the first irrigation. His diet throughout was liquid and light.

In the selection of a case for treatment by this method, we must not lose sight of the fact that narrowing of the Intestinal Lumen at any point is a contraindication. It is therefore necessary to determine the presence or absence of constriction in a given case by the use of the X-Ray before passing the tube beyond the Duodenum. Such a precaution renders the procedure safe, and has the advantage of permitting us to use direct irrigations, beginning at any point in the Intestine which we may select.

MODERN DERMATOLOGY

By J. Richard Allison, M. D., Columbia, S. C.

Dermatology as a specialty when compared to other special branches of medicine is comparatively a new subject. This is especially true in the South. In a paper entitled, "Dermatology in the South" by Dr. J. B. Shelmire, of Dallas, Texas, read before the section on dermatology at the Southern Medical meeting in Washington last fall, a short history of dermatology in the South was outlined. St. Louis, Baltimore, Washington, and New Orleans it seems were the only cities where dermatology was practiced as a specialty until the last few years. During the past five years, the younger men, interested in this line of work, have settled in the different southern cities.

The difficulties encountered by these men have been many. The first great difficulty has been the attitude of the doctors to the new specialty. The average doctor in his student days devoted very little time to skin conditions; he learned to use sulphur, ammoniated mercury and calamine lotion. His attitude towards dermatology is very much like that of Dr. John Hirst, as expressed in the following sentence, "all skin diseases are divided in two classes, those you can cure with sulphur and those you cannot." With such attitude on the part of the medical profession, dermatology as a specialty has had very little opportunity for advancement. Many important skin conditions today are treated in beauty parlors, especially the scalp and facial conditions. Sometime ago a young college girl came to my office, referred to me by one of her friends as "the beauty doctor." In the past, the Roentgenologist has treated the majority of referred skin conditions. While many X-Ray men are qualified to treat malignant conditions of the skin, having made a study of such conditions, and naturally equipped with the necessary appliances, yet with the average dermatoses they are no better qualified than the general practitioners to practice dermatological therapy.

A second great handicap to the dermatologist in the South is the prevalent idea among the laity in general and certain physicians in particular that skin diseases are either some form of scabies or venereal, the patient often suffering from a totally unnecessary and unwarranted humilitation, as well as the physicial suffering from the dermatoses. In many instances, to the atitude of the general practitioner, this blame can be justly laid. It is true that syphilis, the greatest of all diseases, manifests itself more as a dermatological condition than in any other way; that the dermatologist is trained more thoroughly in syphilology; and that through the studies of the dermatologist the greatest advancement has been made in syphilology. For these reasons, the proper place for syphilology, it seems to me, would be with the dermatologist. In the South everybody down to the drug store clerk makes an attempt at syphilitic therapy.

A third great handicap is the great distance from the medical centers where the subject of skin diseases is taught and where there are clinical facilities for teaching and study.

Notwithstanding the above mentioned difficulties, it is believed that there is a great future for this branch of medicine in the South. As one southern dermatologist aptly puts it, "everything grows very luxuriantly in the South," and as the majority of dermatoses are due to bacterial growth, vegetable parasites, and exposure to tropical and subtropical sunlight, we are not lacking for dermatological material in this country.

Since skin disease is such an important branch of medicine, of which so little is known by the average practitioner, it is well to consider in a general way the present status of dermatological therapy today. It is now recognized that the skin is an important organ which is closely related to the

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general economy, therefore, in this branch of medicine, as well as in other specialities, it is very necessary to have a general knowledge of internal medicine in order to treat such conditions successfully. It is often necessary to utilize all facilities used in general medicine, such as laboratory, histological, bacteriological and bio-chemical examinations, sensitization tests, and search for focal infection in order to arrive at a rational diagnosis.

It is well known that certain skin conditions are caused by certain proteins and pollens. We have skin tests today which have been of aid to us, not only in a diagnosis of the cause of the conditions, but enables us to attain a cure by either desensitizating the patient to that particular protein or removing the offending article from contact with the patient or from the food as the case may be.

In all fungus infections a diagnosis is made by the laboratory findings from the spores from scrapings obtained from the lesions. These conditions are very prevalent in the South. The great majority of scaly and vesicular eruptions about the hands and feet and even the body are due to a fungus infection. Formerly these conditions were classed as eczema, or a peculiar disease called pomphlox. Fungus infections open to the dermatologist a wide field for study, more than nine hundred (900) different fungi have been isolated and studied, yet only a few of that number have been proven to be pathogenic in skin diseases. However, it is firmly believed that that great class of skin diseases so loosely grouped under the general head of eczema, which has been facetiously described as "a moist, vesicular scaly eruption, the cause of which is not known" will in the future be greatly decreased by further study of fungus infections. It is my personal belief that in the not far distant future, the word eczema will be relegated to the shelf for good.

We must not confuse these obscure fungus infections with the well known clinical entities already described and worked out thoroughly, commonly called ring-worm of the scalp, beard and groin, the classical names of which are tenia capitis, tenia sycosis and tenia cruris. These three particular infections while belonging to the general classification of fungus infections are not new diseases. The successful treatment, however, is comparatively new. In recent years ring-worm of the hairy regions has been cured by X-Ray. Ring-worm infections of the hairy region, extends to the root of the hair follicle and it is practically impossible to cure ring-worm of these regions with local applications. In recent years, we have learned to measure the X-Ray dosage sufficiently accurately to epilate the hair completely without permanently destroying the hair follicle, in that way curing obstinate ring-worm infection at one sitting which formerly took years to cure. Ten years ago there was a school in London for children who had tenia capitis because the condition was infectious and the average time required for a cure was two years. In fungus infection of the hands and feet, however, the X-Ray is not so efficacious. There is still great diversity of opinion as to the best method of treating these conditions. Recently Whitefield of London has advocated an ointment of salicylic and benzoic acid, known as Whitefield's ointment, which seems to be the best local application advocated up to the present time.

The present status of syphilitic therapy is generally fairly well known and need not be discussed here. Recently, especially in the South, another obstinate and formerly incurable condition has been added to the field of dermatology, granuloma inguinale. This a tropical and sub-tropical disease, due to the leichmans-donovan bodies and was formerly known as ulcerating-pudendal sores, and phagedenic chancroids. Many of us in South Carolina have studied these conditions recently, notably Lynch of Charleston and it has been quite a surprise to find the condition so prevalent in this country. Tartar emetic in a 1% solution given intravenously acts almost as a specific in the

early cases if continued for a sufficient length of time. It has been my experience to see several cases cured and several late cases which have gone on, ending fatally in spite of treatment.

In the local treatment of skin diseases we have a number of agencies, both physical and chemical, which are used to an advantage. Of the chemical agents, the most recent and noteworthy advancement has been the application of crude coal tar as recommended by C. J. White of Boston. This is a mixture of coal tar, zinc oxide and starch. The preparation was first used in infantile eczema and was found to have remarkable influence in these cases. Many extreme inflammatory conditions of several months standing in young infants have been cured with only a few applications. Heretofore, we have been at a loss for local remedies to cure infantile eczema, many cases continuing on in a horrible state in spite of all treatment until a year or so old when the diet was materially changed. The use of this coal tar preparation is not confined entirely to infantile eczema. Many chronic conditions in adults respond favorably to its use. There are many other local remedies that could be well discussed in an exhaustive paper on this subject.

The X-Ray in my opinion is the most important single agent we possess at the present time for the treatment of skin diseases. It has many advantages over the other remedies heretofore used. First, it can be used over a wide area in a minimum of time. Second, its dosage can be accurately measured. This has been well proven in its application in the treatment of tenia capitis. With the X-Ray we are able to administer 1 1-4 units of X-Ray to the scalp at one sitting, which will sufficiently inhibit the growth of the hair follicles to cause complete epilation for a period of time, about three months, when the hair will regrow; while 1 1-2 units will cause a permanent alopecia. Third, it has a remarkable inhibitory action on all inflammatory tissue when given certain doses and a remarkable destructive action when given in stronger doses. I have found X-Ray so useful and use it so frequently in such a wide-variety of skin conditions that it occurred to me that probably I was using it to the extreme. With that point in view, on a recent trip North, I inquired from dermatologists in regard to the frequency of the use of X-Ray in their practice, and the answers showed me that it ran from 60 to 80% in all skin conditions treated by them.

Radium has much the more restricted field in dermatology, due first to the limited area over which it can be used at one time, and second to the high cost and enormous quantity required in order to treat any extensive dermatoses. It is very probable that radium can do all that X-Ray can in skin diseases, if one had the time and a sufficient quantity of radium. In certain localized malignancies and certain birth marks, it is considered superior to X-Ray by many.

Recently many so called ultra-violet and quartz lamps have been placed on the market and urged by their agents as "cure alls" for all dermatoses. In certain conditions such as alopecia areata, lupus erythematosus and certain vascular nevi, they are considered as good, and by many to be better, than any other form of treatment. It remains true, however, that they are a poor substitute for X-Ray and radium and the claims made for them are exaggerated. For a conservative opinion from one who has used these lamps probably more than anyone else in the United States, one should consult the writings of, Oliver of Boston.

Electrolysis, electro-coagulation and various other forms of electricity are used extensively in dermatology. Electrolysis is used particularly in the removal of superfluous hair and certain cosmetic defects, which treatment every dermatologist is from time to time called upon to do. Electro-coagulation (bi-polar d'arsonval current) is used by many in the treatment of widespread malignancies instead of surgery. It is a great question in many cases of malignancies whether the treatment by electro-

coagulation followed by X-Ray or radium is not superior to surgery followed by X-Ray or radium. It is often impracticable to remove malignant conditions by surgery on account of the cosmetic defects. This may be the reason the majority of dermatologists and roentgenologists prefer electro-coagulation or electrolysis with X-Ray or Radium instead of Surgery. However, no fast rule can be laid down for the treatment of all cases of cosmetic defects and malignancies of the skin.

DISCUSSION

DR. ROGER G. DOUGHTY, (Columbia):

Whenever I see a case of dermatitis I feel perfectly helpless, I do not know anything about it, and this talk has seemed to me to show that while the skin men have done a tremendous amount of work, they are only beginning to scratch the surface. The whole thing means that skin lesions should be referred to the men who are in that specialty. That is the primary thing I gather from this talk.

DR. R. LEE SANDERS, (Memphis, Tenn.):

Just to re-emphasize what was brought out a moment ago, I think dermatology is a specialty to itself, and it has grown by leaps and bounds. It is surprising to see the things brought out in dermatology since I have been interested in the subject. It is my good fortune to work with Doctor Hasse of Memphis, who has become nationally known as a dermatologist, and in the University of Tennessee he has taken over all of the dermatological surgery, and at the same time all the syphilis is being treated by his service. As a specialty it is a big field, particularly in the large cities. I am more and more convinced that dermatology is a man-sized job, and if handled properly a great deal of time and money will be saved.

SOME PROBLEMS IN RADIUM THERAPY

By B. B. Steedly, M. D., Director and F. M. Johnson, M. D., Chief of Radium Department, Steiner Memorial Clinic for Cancer and Allied Diseases, Atlanta, Ga.

IMPORTANCE OF SUBJECT

A consideration of any of the phases of a malady which afflicts and is the cause of death in approximately 1/10 of all persons past the age of 40 and not a few under this age cannot fail to elicit the interest of any group of men or women whose chief concern is the alleviation of human suffering and the control of disease. All the more so when we consider the large number of benign tumors or closely allied conditions which either behave in a manner similar to cancer or prove to be precancerous lesions.

BRIEF SURVEY OF THE HISTORY OF CANCER THERAPY

A survey of the history of cancer therapy leads one to believe that it has probably received throughout the ages more skilful elaboration than that of any other disease. The methods used aimed at the total removal, from the body, of the whole of the offending growth; to accomplish which surgery has been the chief reliance. The actual cautery and more recently electric coagulation, dessication, fulguration, etc. have contested the sway of the knife. A more consistent rival of the scalpel, before the advent of the modern electrical contrivances and the newer physical agents, has been the chemical caustic in the form of various "cancer pastes." They still enjoy the approval, even though it be rather indifferent, of certain medical men for a restricted group of cases and they remain, as ever, the panacea of the "quacks."

Read before Spartanburg County Medical Society at its regular meeting, July, 1924.

LIMITATIONS OF SURGERY ALONE

Surgery still remains the best single means of combating neoplasms as a whole and the same may still be true for those neoplasms belonging in the malignant class but it must be admitted that our long experience with surgery and the gradual improvement in technique have brought about a degree of refinement of this art which is not likely to undergo much further improvement. While we are grateful for

what it has done and is doing we are aware of its limitations and painfully aware of its dangers when ill advised.

IMPROVEMENTS OF RECENT YEARS

A very radical improvement and change in our conception of tumor therapy has occurred during the past two decades. This improvement has followed the discovery of X-Rays and radium. This does not mean, however, that these are necessarily superior to surgery but it affords us a means of successfully treating cases hitherto not amenable to any forms of treatment. I refer especially to advanced cases and tumors in inaccessible locations or so situated that surgical removal would entail the sacrifice of important organs. Lately, they are claiming their superiority over surgery in certain early cases and are already proven superior in many precancerous lesions. However, these agents should not be arrayed against surgery or vice versa as so often occurs in the professional and lay minds. Each has its proper place in our armamentarium and frequently a combination of surgery and radiation gives results unattainable by either alone.

INCREASE OF SURGEON'S RESPONSIBILITY SINCE THE ESTABLISHMENT OF RADIATION AS AN IMPORTANT AID IN THE THERAPY OF TUMORS.

We all remember how as medical students we delighted more in the study of actual diseases, their symptoms and treatment, than in the drier subjects of anatomy, pathology, materia medica, etc., the last named I have referred to as the "hard tac" of medicine. The same psychology influences us later in our professional activities—we treat medical cases without inquiring sufficiently into the rationale or modus operandi of the remedies. Likewise; we remove pathology without understanding its nature or the whence, how an whether of it. We should constantly endeavor to overcome this inherent weakness and I am bringing out this point now because knowledge of the structure and natural history of tumors is a sine qua non in a judicious choice of or combination of remedies in the treatment of cancer. There are varying degrees of radiosensitiveness in tumors dependent partly upon the type of cell, partly upon the relation of stroma to cells and partly upon the soil in which they grow. As we learn better to correlate certain symptoms and physical signs with definite types of tumor and, when this is impossible, resort, in suitable cases, to a biopsy our choice will have a more rational foundation and our end results will be correspondingly improved. While the twentieth century has, through these newer physical agents, marked a new era in the treatment of tumors and whi'e with each additional year there has been a nearer approach to correct dosage and proper technique of administration it is not without a price. Our knowledge of the structure and natural history of tumors must increase pari passu. Thus the responsibility of the oncologist is greater.

WHAT IS RADIUM AND WHAT ARE X-RAYS?

While it is not my intention to inflict on you any lengthy discussion of the physics of radiation, I am convinced that a very few minutes devoted to a consideration of the nature of these physical agents will not be amiss. It goes without saying that the busy practitioners who constitute most of my audience have not time to read about such. This is no reflection, in fact, if they did read much along these lines they would probably be neglecting something pertaining to their daily work of vastly more importance to themselves and especially to their patients. To the minds of many not engaged in this work, I imagine that there is about as much mystery surrounding radiation therapy as surrounds the use of the "mad stone" in bites of rabid animals. Radium is radio-active because its atoms are continually disintegrating, i. e. going to pieces. It is often said that radium gives off three kinds of rays, alpha, beta and gamma, but in reality, radium itself only gives off alpha rays which become atoms of

helium gas and the residue becomes radium emanation, another gas, which in turn gives off alpha rays and radium A, which is a solid. By a similar expulsion of an alpha particle radium A is converted successively into other solids called radium B, C, D, E and F, some of which give off beta and gamma rays and constitute active deposit of quick change, the 1-2 life period which is only about 30 minutes. It is the active deposit which gives off beta and gamma rays. The 1-2 life period of radium itself, that is the length of time it takes for 1-2 of the atoms of a given quantity to go to pieces, is about 1700 years. Whereas its next disintegration product, radium emanation, has a half period of 3.85 days. The emanation, because of its flexibility, its capacity to be compressed into a much smaller bulk than its parent radium, and the liability to the loss of the radium itself through theft or accident, is more generally useful and preferable but it is not practicable to use the emanation unless one has a half gram or more of radium. Its use requires the installation of a mercury pump, the radium being left in solution in a safe or vault and connected by glass tubing with the mercury pump. The alpha, beta and gamma rays are comparable to similar rays in an X-Ray tube, the alpha corresponding to the canal rays, the beta to the cathode rays, that is the stream of electronstraveling from the cathode to the anode and the gamma rays corresponding to the X-Rays. The alpha and beta rays represent material particles traveling at great speed, the rate of the former being 11000 or 12000 miles per second but having very little penetrating power not getting through the thin glass wall of its container, not being utilizable therapeutically therefore except in the form of the active deposit. The beta rays travel at an average speed of 40,000 miles per second are negatively charged with electricity, the opposite of the alpha rays and are able to penetrate about 1 cm of animal tissue being consequently serviceable in superficial radiation and, due to their caustic action, play an important part in the destruction of tumor tissue when minute glass tubes containing emanation are implanted directly into tumors. The gamma rays, though the least numerous, are the most important because of their much greater penetrating power. They are about twice as penetrating as the most penetrating X-Rays which can be produced even with the higher voltages and are like them, electro-magnetic waves traveling at the speed of light, 186,000 miles per second. The penetrating power depends on the wave length, the shorter the greater the penetrating power and the gamma rays like the X-Rays do not come off as a homogeneous bundle of rays but vary considerable in length, the longer or less penetrating being the most numerous. These longer wave lengths are mostly absorbed by the superficial tissues hence the difficulty of delivering a killing dose to a tumor situated some centimeters deep. To overcome this difficulty we use filtration, i. e cause the rays to pass through certain metals which absorb the rays directly in proportion to the density of the metal and indirectly in proportion to the penetrating power of the rays. Thus the so called soft rays (longer wave lengths) are eliminated by the metal filtration thereby avoiding burning and damage to the superficial tissues which would have absorbed them. The coefficient of absorption of the harder and more penetrating rays (shorter wave lengths) is much less, that is to say there is a more uniform distribution of the intensity of the radiation through successive layers of tissue. It must be remembered, however, that even with the most penetrating rays the deeper parts receive less radiation than the superficial. This difference can be offset in cases where it is possible to use two or more portals through which to treat instead of the usual one. In such case the skin and superficial tissues at any one portal are spared from overdosing while the deeper parts get a portion of the radiation from each portal.

The unfortunate thing about filtration is that by the process the total radiation is

greatly reduced—a few mm thickness of aluminum reducing it about 1-2, 1-2 mm ag. cutting out 95% and 1-2 mm platinum cutting out 97% of the radiation. Thus with the Ag. filtration only 5% of the original bundle and with the platinum only 3% is available for use.

Another factor of prime importance in treating tumors beneath the surface is the effect of distance since, because of the dispersion of the rays radially from a central point, the intensity or effect on the tumor varies inversely as the square of the distance or directly as the sine of the angle. So, in order to approximate an equalization of the effects on the proximal and distal surfaces of the tumor, the radium (or X-Rays) must be placed at a considerable distance from the skin, say 6 to 15 cm, with X-Ray 10 to 20 in. With such distances large amounts of radium are necessary.

Dosage in radium therapy is reckoned in mg. or mc. hours, a mg, and a mc. being the same in value. It is obtained by multiplying the amount of radium mg. or the amount of radium emanation mc. by the time, thus 50 mgs. or 50 mcs. allowed to remain applied for four hours would be 200 mgs. or 50 mc. hours. The quantity and time factors alone, however, would convey very little information, the distance, kind and amount of filtration, method of using, possibility of increase of dosage from cross firing and secondary and scattered radiation all must be taken account of.

Intensity in x-radiation increases directly as the voltage, milliamperage and time and inversely as the square of the skin target distance.

Besides the much greater penetrating quality of gamma rays of radium over X-Rays, the difference between the two is largely one of economy. It is estimated that the filtered radiation of a Coolidge tube operated at high voltage and 5 milliamperes of current will give the intensity of several grams of radium under like conditions of filtration. This is strictly true only for moderate filtration for with heavier filtration the X-Rays would be entirely eliminated while the harder gamma rays would still penetrate it.

LAW OF BERGONIE AND TRIBONDEAU

Clinical experience and experimental data led early to the recognition of the first law of radiation therapy which is, that—tumors composed of rapidly multiplying cells especially those of embryonal type and in particular those of the lymphoid group are the most susceptible to radiation, the degree being dependent on the extent to which these characters are developed. On the other extreme as to radiosensitiveness are tumors derived from adult cells and reproducing adult cells such as squamous carcinoma, neuro sarcoma, osteo sarcoma and many adenomas and other benign tumors.

However, it must not be inferred from these remarks that the destruction of the neoplasm is due entirely to the action of the rays upon the tumor cells. On the contrary, it is due largely, if not chiefly to their action on the surrounding tissues, the vessels of which, capillaries, veins, arteries and lymphatics have their lumina narrowed through thickening of their intima. This materially impoverishes the tumor tissue and helps bring about its destruction. The fibrosis which follows later aids in limiting the extension of the disease from portions of the tumor which may have escaped destruction. This last advantage, however, carries with it the disadvantage of making subsequent radiation less effective. In addition to this local reaction there is believed to be developed in the system a certain amount of resistence from absorption of autolyzed tumor cells.

RELATIVE RADIOSENSIBILITY OF TUMORS

Although many factors influence the radiosensibility of tumors and there are individual variations in the response of tumors of the same structural type, yet clinical experience has blazed the way for a rough classification based on their relative radiosensibility into the following groups:

a. Lymphomas; These are the most sensitive and without exception melt away under adequate radiation. They include, besides pure lymphocytomas and lymphosarcomas, also the closely related tumors; endothelioma of lymphnodes, endothelioma of bones and myelomas.

b. Embryonal tumors; These are also quite radio sensitive. They are tumors derived from embryonal cells and retaining embryonal characters. The most familiar example coming under this heading and one of the first treated with radium is the basal cell epithelioma of the skin, called also rodent ulcer. It is the common cancer occurring on the face above the level of the upper lip. The regional glands are not involve and it does not metastasize but extends locally even bone proving no barrier but at this late stage it is more difficult to control. Some cancers of the cervix uteri and of the salivary glands are of the basal cell type. Other embryonal tumors occur in the ovary and testis and the Wilms tumor of the kidney in infants is of this type.

c. Cellular Anaplastic Adult Tumors; These tumors originate from cells of adult tissue in glandular organs, the cells, however, instead of retaining adult characters, hark back, so to speak, and become round cell diffuse carcinomas. Whereas most round cell carcinomas in children react to radiation readily and the end results are better than might have been anticipated. Most round cell diffuse carcinomas in adults offer an exceedingly bad prognosis. Diffuse carcinoma occurring in the breasts of young women are frequently of this type and offer an unfavorable prognosis under any form of treatment even if seen prior to palpable glandular involvment.

d. Desmoplastic Tumors; These arise from adult cells and reproduce cells of adult type. This group includes carcinoma simplex, fibro carcinoma and squamous carcinoma. These tumors while more refractory to radiation are nevertheless a satisfactory class to deal with because of their slower growth allowing more time for reactive inflammation to limit their extension, their generally less invasive tendencies and when the regional lymph glands are involved usually one or two show changes a good while before others of the chain.

e. Adeno carcinoma; representing cases in which there is less atypical character to the cells as where carcinoma slowly supervenes on an adenoma of the breast, uterus, etc.

The poor results from radiation therapy alone in these cases is in keeping with the general proposition that the more adult the type of cell and the less the arrangement of stroma and cell departs from the normal, the more refractory the tumor to radiation.

f. Fibroblastic sarcoma: In this group the most that can be expected is a slowing of the growth and the conversion into a less malignant neoplasm. Osteo sarcoma is representative of this type.

In conclusion, I would remind you that while we are waging a better war on cancer than formerly and are approaching it from other angles the ancient enemy still shows his teeth and remains unconquered. We should, therefore, be on the qui vive and attack before he has entrenched himself. This means get the cases early and not overlook precancerous lesions. This is the gospel that the general practitioner must preach to his patients.

UROLOGY IN ITS RELATION TO OTHER SPECIAL BRANCHES OF MEDICINE AND SURGERY, OR THE OPPORTUNITIES OF AN UROLOGIST AS A CONSULANT

By Marion H. Wyman, M. D., Columbia, S. C.

Uro is a prefix meaning of or pertaining to the urine. Strictly speaking urology is that special branch of medicine relating only to the urine or urinary organs. However, in the male, on account of some organs as the prostate and male urethra, being common to both the urinary and genital tracts, the word urology is accepted by us to include the entire male uro-genital system. On the other hand, the female reproductive organs are not actually or even understood to be connected with the urinary tract as a specialty. Gynecology is the term used to refer to the female genital organs as a special branch. Nevertheless at Johns Hopkins Hospital urology is distinctly and separately associated with the genital organs in both the male and the female. Drs. Kelly and Hunner, gynecologists, have written as much on the urinary diseases as on gynecological subjects, and Dr. Hugh Young, urologist, has attained his greatest fame on account of his work on the prostate. Thus at Hopkins the gynecological and the genital departments both diagnose and operate their respective urological cases. At another large medical center, The Mayo Clinic, urology is distinctly and only a diagnostic and consulting specialty. There, except in the purely medical cases, the urologist ceases to treat his patient after the diagnosis is made. Most individual urologists, should like Keyes of New York City, not only diagnose, but operate, their own patients. A few doctors following this specialty reach out and extend their fields of activity beyond the actual confines of the genito-urinary system. The writer personally has seen well known urologists of France and even Dr. Edward Keyes, Jr., of New York City, perform uncomplicated inguinal herniotomies. Their excuse would, no doubt, be that the vas-deferens which is a genital organ, passes through the inguinal canal.

Read before the South Carolina Medical Association, Orangeburg, S. C., April 16, 1924.

All urologists include venereal diseases, especially in the male, as properly coming within their special practice, while gonorrhea in the female is usually treated by the gynecologist. An interesting question suggests itself right here:—The question being; is syphilis a venereal disease, who should treat it? All physicians should be able to recognize, and treat this disease which manifests itself—first, usually as a genital sore; but in the second stage the dermatologist can properly claim a preference, and in the third and last stage all practitioners, both physicians, and surgeons including the internist and neurologist can advance good reasons why they should be allowed to handle these cases. However, we contend that syphilis is practically always a venereal disease in the primary stage, it is usually transmitted like other venereal diseases; and that the all important point is to recognize the initial sore or lesion before the secondary stage is reached for it is in the initial stage that we can most quickly and certainly cure our patient. Therefore, from a prophylactic, and an early diagnosis and treatment view point the genito-urinary man has the first claim.

Before taking up in some detail the urologist's relationship to the internist and surgeon, these being the two with whom he most frequently consults, it may be interesting to note briefly how often the urologist has conditions in common with the other special branches. For example: Obstetricians need help with pyelitis complicating pregnancy; gynecologists have so many urinary complications until occasionally they, as shown by Kelly and Hunner, become urologists themselves; at times orthopedists request reports about urethral and prostatic

infections in reference to arthritis; neurologists, with spinal cord lesions affecting the urinary bladder, use urological assistance; even eye, ear, nose and throat men and pathologists have G. U. consultations and finally how often do our good friends the X-Ray men call on us to outline the urinary tract with opaque catheters and solutions to show whether or not suspicious shadows are in the urinary organs. Although the writer has an X-Ray outfit in his cystoscopic room at his office and finds it an essential adjunct, he does not feel that it is an advantage or even wise for him to do his own X-Ray work. He has good X-Ray specialists available who come to the office when needed. The urologist should always interpret the X-Ray plates of his patients in conjunction with his X-Ray consultant.

Consultations with the internist and general practitioner are very satisfactory. They are primarily interested in making a diagnosis and seem to have a sympathetic understanding with their urological diagnostic brethren. It would appear to be proper to let the internist be the chief of each group of special workers. Each worker should make his separate examination, report in writing his findings with his interpretation of same, draw his conclusions and make any necessary recommendations to the internist. The internist could correlate all the different reports and draw very definite conclusions about the person examined. An individual worker, say the urologist, wanting special reports, for example, from the X-Ray consultant, he would, of course, get these reports before interpreting his own findings.

The following case shows how dependent special workers are on each other for help. An internist referred a very weak, and thin negro man, reporting that he had been unable to explain the patient's condition by a general examination. In fact, all examinations including chest, sputum, blood, urine, etc., were negative. A slightly suspicious fullness was noted in right costo-vertebral angle. However, there was no pulsation and very little fluctuation in this area. Ureteral catheterization showed urine and function from both kidneys to be normal. This patient did not have an elevation of temperature, nevertheless, since the urological organs were under suspicion it was up to the urologist to clear his specialty. On aspirating the costo-vertebral angle, a syringefull of pure blood was evacuated. The internist decided to aspirate for himself, and he also obtained pure blood. The X-Ray showed nothing definite. The patient was found dead in bed a morning or two later. An autopsy revealed an aneurism of an immense size of the abdominal aorta. The internist thought of and discussed aneurism but on account of no pulsation did not make a positive ante-mortem diagnosis, and only the autopsy convinced him that the urinary tract was not involved.

General surgery was comparatively old, fairly firmly established and well understood long before special urological diagnostic methods had reached their present state of efficiency. Ten years ago was the first time that our good state of South Carolina could claim that she had a physician confining his entire time and practice to urology. Yet, today, surgeons everywhere in our state use urological consultations constantly, and find urological aid indispensable in making scientific diagnoses.

In view of the fact that the greatest difficulty in surgical diagnosis, arises in that part of the human anatomy bounded above by the diaphragm and below by the pelvic bone, known as the abdominal cavity, and remembering also that the urinary and genital organs occupy spaces practically the entire length of this diagnostic jungle, these organs under discussion must necessarily always be excluded before any positive diagnostic conclusions can be reached.

It must be admitted that it was primarily the need felt by the general surgeons for help in urological diagnosis that caused not only the development of diagnostic urological instruments, but also caused most of us doing this special work to take up this

branch. The writer is particularly mindful of this fact and grateful to the general surgeon who caused him to confine his practice to this work. However, now that urology is firmly established and recognized as a distinct specialty and since it holds such an important place in differential diagnosis, there seems to be a tendency on the part of some urologists to almost be willing to "strike" against the general surgeon who continues to operate on urological cases, for the general surgeon must do these operations under the direction of his urological consultant. You may argue that other consultants such as the X-Ray men hold the same relationship, however, on careful consideration you will see that in urological cases the urologist really holds the general surgeon at his mercy with reference to a diagnosis and treatment. Urologists are surgeons, but all surgeons are not urologists.

Surgeons have always, and properly so, prided themselves as being not mere operators or just technicians, but they argue that a real surgeon uses a peculiar faculty called "surgical judgment," which diagnoses the ailment, and determines just where, when, and how the knife should be applied. The good surgeon has learned that many rush-in and stay too long, where others fear to enter. The urologist is now expected not only to diagnose urological trouble but he must also indicate what and how much should be done in the way of an operation. His responsibility is great and very exacting and his decisions are constantly being proven to be correct or not upon the operating table.

Just recently a case was seen, in consultation that emphasizes the point under discussion. This patient had a palpable tumefaction in the left upper abdomen. Urine was practically normal, there was a subnormal temperature and leukopenia; now on account of the lowered white blood count together with a mass which could have been the spleen, this patient may have had malaria. X-Ray of the urinary tract was negative for stone. A cystoscopic examination with bilateral ureteral catheterization disclosed a left pyonephrosis with a blocked ureter, the other kidney's function was low. The urologist here made a positive diagnosis, and also recommended a two stage operation. The pus kidney was drained under local anesthesia and after two weeks the patient's general health and other kidney's function had improved to such a marked degree that the diseased organ could safely be removed under a general anesthetic. Had the surgeon in this case been able to have diagnosed the pyonephrosis he would have still needed the additional information that the other kidney was below normal in function.

Hypernephroma which is frequently manifested by profuse haematuria without pain or symptoms to suggest the location of the bleeding also emphasizes this point. A complete urological examination including the use of the cystoscope is the only method to locate the source of the bleeding and to determine the condition and function of the other kidney. A man in our State Penitentiary at this time has a malignancy in one kidney with an infection and very low function of the other. The Surgeon with this information furnished by the Urologist, has been saved the embarrassment of having his patient die following an easy nephrectomy.

Another case is interesting—A young white man, a barber, age 27, consulted Dr. J. S. Fouche for "stomach trouble" claiming that he had suffered for three years, and had been diagnosed gastric ulcer. His description of the character and time of the pain together with the fact that he received some relief from water or food was very suggestive of ulcer. His past history was unimportant. He had never experienced any urinary symptoms. General physical examination was practically negative. There was some tenderness in the epigastrium and very slight tenderness in left costo-vertebral angle. Tonsils were large and infected. Patient's general appearance showed a pale, poorly nourished and anxious man. Laboratory examination revealed a urine cloudy with pus and red blood cells. Feces were

negative for ova and blood. Blood Wassermann negative. Leucocytecount slightly increased. A plain X-Ray of urinary tract disclosed the left kidney's pelvis well filled with an opaque substance. The remainder of the urinary tract was negative. The X-Ray man did not want to believe that the pelvis was so regularly outlined with multiple calculi, but insisted that it must be filled with an opaque solution as if in preparation for a pyelogram. The combined kidney function, as determined by phthalein, was 40%. A cystoscopic examination revealed left ureteral orifice congested. Both ureters catheterized, urine from left kidney showed much pus and no function to phthalein. Urine from right kidney was practically normal with a 40% phthalein. Thus you note the right kidney was doing all the work as disclosed by the phthalein test. On account of the positive diagnosis of infected renal calculi of the left kidney, and infected tonsils we did not have gastric contents examined. A general surgeon removed this man's kidney in a one stage operation and the patient had an uneventful recovery. The surgeon saw this patient, possibly, for the first time on the operating table. Of course, he had the opinions of the men who worked out the diagnosis. When this man was discharged from the hospital with one kidney gone he needed more help and advice. The urologist is prepared to give this special advice which means so much to the future well-being of these kidney patients. We had this patient's tonsils removed and other infected foci cleaned up and he is in perfect health today, five years after his operation.

Important questions arise in these renal calculi cases:—First, the mere presence of a calculus in the kidney does not necessarily mean that the calculus should be removed. There is a peculiar but definite "stone bearing" period is some individuals. Dr. Geraghty recognized this fact and recommends that no surgical interference be attempted until all contributing causes to stone formation have been "cleaned up". These causative factors are focal infections and obstructions in the urinary tract. At times just a pyelotomy with drainage should be attempted in one stage and the calculus removed later. A patient named Livingston, calls attention to another interesting point. this being:—Whose duty is it to make a diagnosis of peri-nephritic abscess? This case was negative to X-Ray and ureteral catheterization. The urine from both kidneys being entirely normal on two cystoscopic examinations. The patient was very sick with a high leucocyte count and fever. The urologist declared the urinary tract to be negative; the internist reported the chest normal and thought that the symptoms were those of a kidney or peri-nephritic involvement, still the surgeon was unable to aspirate pus out of the peri-nephritic space. On account of the patient's being so sick an exploratory operation was decided upon. Then the question arose whether to go in anteriorly or posteriorly. The surgeon first thought of a posterior incision over the kidney, but finally on re-examination under a general anesthetic he decided to go in anteriorly. This case had been very annoying and trying because it looked like a kidney situation, especially after the surgeon failed to find pus on aspirating the peri-nephritic space. The condition turned out to be a peri-nephritic abscess situated high above the kidney. The anterior incision was avoided because a final aspiration by the urologist on the operating table disclosed the location of the pus.

One final case, a negro man, had been in Government hospitals for several years and came to Columbia with symptoms of intense cystitis and was very much under weight and very weak. Chest, sputum, and urine were all positive for tubercular bacilli. There were no signs or symptoms to suggest which kidney or if both were involved. The total kidney function was about one-half normal. He had been cystoscoped many times, including several attempts by the writer, but without success in catheterizing the ureters. The bladder was intolerant to

fluid and intensely inflamed. Finally a cystotomy to insure free drainage was done to rest the bladder. After resting the bladder for a week we succeeded in catheterizing the ureters and found the left kidney to be the one principally involved, and determined the right had sufficient function to risk removing the left. Just at this point the Government decided to transfer this man to another hospital and to another surgeon for operation. The patient objected to being moved and lose the benefit of our diagnosis which had required so much time, and work, to say nothing of the pain he had suffered. We removed the diseased kidney claiming it was an emergency. He was re-examined recently four years after the operation, this man now weighs more and is in better health than ever in his life. The operation of nephrectomy was easy, but the diagnosis and preliminary work was awful to both patient and to the physician.

In conclusion it is well to stress the importance of knowing the condition of both kidneys before attempting any kidney surgery. For it is a well known fact that not only have wrong kidneys been removed through imperfect diagnostic methods, but that many lives have been lost on account of attempting too formidable operative procedures in one stage. Urologists ask to be recognized as doing very exact and indispensable diagnostic work, and also that due recognition and credit be placed on our services in the general management of urological cases when others operate. In prostatic surgery for example, the main emphasis has been on the pre-operative preparation, the urologist's part, rather than on the actual enucleation of the hypertrophied gland tissue, the surgeon's part. Urologists deserve the credit for decreasing the mortality rate in all operations on the urinary tract. We do not ask that the urologist be the only one to operate on genito-urinary conditions, although we feel that after he has done the diagnostic work that he is peculiarly well fitted to do any urological operation.

DISCUSSION:

DR. ROBERT WILSON, JR., (Charleston):

One point I would like to endorse and emphasize, and that is the importance of the internist being responsible for the diagnosis in a case which is under his care. I think very often we have been inclined to "pass the buck" so to speak. Personally, I feel responsible for every patient who commits himself to my care. Some of the most gratifying work I have done has been with men in other lines—we go over the case very carefully and come to a conclusion, but the internist must feel a responsibility for the patient.

Another point which the Doctor made and which I think is important is the focal infections and their influence upon the urological and general surgical situation. We frequently find that the condition for which operation is done depends upon a focus of infection elsewhere—teeth, tonsils or sinuses—and the cleaning up of that situation has been overlooked. In those cases there is danger of recurrence.

It is always important for us to make a very thorough examination of the patient, and in case of the discovery of foci of infection remove them as well as take care of the conditions which are immediately pressing for relief.

DR. GEORGE BUNCH, (Columbia):

We consider the urologists our best friends and we cooperate with them and they help us out in diagnosis. As to the urologist actually doing the surgery, urological surgery is oftentimes major surgery. The renal artery comes from the aorta, and in a nephrectomy a man must know something about major surgery. If the urologist will learn something about general surgery before attempting this major operation I am sure it would be to everyone's advantage. A man must have a good deal of experience before he attempts these surgical procedure.

DR. F. D. RODGERS, (Columbia):

I believe that the internist is the boss doctor of the lot. He comes before every other man. I believe the specialist should not see a patient except when referred by the internist. In this connection I would like to say that just yesterday I saw a patient who had been referred to a urologist for pyuria. The urologist had done everything—he made his own X-Ray plates, did his own laboratory work. He is an excellent urologist and had done some very fine work. In addition to pyuria he found some shadows in the urinary

tract that he thought were gall stones. He told this woman she should go to a surgeon and have the stones removed and she would be all right; but the woman did not get better and some time later she consulted an internist. The internist went over the report of the urologist and several other specialists who had examined the patient, then he asked for an X-Ray of the chest and found she had tuberculosis involving the whole right lung and the left apex. The urologist had done excellent work, but what that woman needed was an internist to direct the work. I do believe that the urologist, the X-Ray man, the eye, ear, nose and throat man, and every other man who sees the patient should see the patient in consultation with either a good general practitioner or an internist—somebody to take the responsibility for the whole patient and not the urinary tract, the eye, ear, nose and throat, the heart or what not. There should be an internist in active charge of the patient so as to correlate the findings and give the patient the result of this work.

DR. M. H. WYMAN, (Closing):

I am sure Doctor Bunch and Doctor Rogers are correct. I brought this up to try to get sympathetic cooperation between the men. If you know a man and believe in him, take his report and go ahead. I did not intend to get up any controversy between the medical men and the surgeon. But you must remember that urology is only ten years old in our State. The men are younger than the general surgeon. We would like to do a little surgery if we are able to do it, but before a man can do a nephrectomy he is supposed to be familiar enough with general surgery to be able to do it. Preparation is the all-important thing. We have no fight with anybody—I just wanted to encourage closer cooperation for the good of our patients.

INSTRUCTION OF MIDWIVES BY A COUNTY NURSE AS CONDUCTED BY THE DILLON COUNTY HEALTH DEPARTMENT, SOUTH CAROLINA.

By R. G. Beachley, M. D.

With the organizatoin of the county health unit early in 1923, and a subsequent survey of the women practicing midwifery in the county. A pressing need was seen for some form of supervision, and instruction.

In a comparatively small county of not more than twenty-five thousand population, there were in the summer of 1923, seventy women, mostly negroes, practicing the delivery of children. The majority of these children could not read or write, and their ignorance on matters pertaining to the duties of a midwife, was appalling.

Practically no instruction had ever been given them, and with their ignorance, and crude methods they were more of an liability than an asset to the community.

A few cooperated with the doctors in their work.

The large majority used their own judgment in the delivery of their cases, which undoubtedly increased the maternal mortality, and morbidity in the county.

One of the first undertakings of the newly formed health department was to bring these women direct control of the county nurse. The first step was to secure the names and addresses of all the women practicing midwifery in the county.

Arrangements were made to hold a series of classes in different parts of the county, by the county nurse, where these women might attend and receive instruction.

In addition to giving instruction at these classes it was desired to eliminate those who where unfit to practice midwifery, and limit the work to the best, scattered stragically in various parts of the county.

The ones granted certificates were given all the training possible by the county nurse.

The course of instruction consisted of a series of ten lectures held in different parts of the county. The classes were usually held in the colored schools, as the majority of the midwives are colored women.

The few white midwives were given instruction at the health department.

At the close of each class the women are allowed to ask questions. Answers are given as clearly as possible not using technical, or medical terms which would be confusing.

A mannikin was used demonstrating the handling and care of the baby.

Each midwife was required at the end of the series of classes to present her obstetrical bag, for inspection by the nurse.

Following the series of classes the nurse selects only those who in her judgment are fit to practice midwifery. They are given certificates issued by the state board of health, and instructed to report to health department once every month for instruction and supplies. A record is kept on an individual card of the visits of each midwife to the health department.

Any midwife failing to comply with the regulations is subject to the withdrawal of her permit.

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M. D., CHARLESTON, S. C.

We are accustomed to look upon bacteria as the cause of disease. With the name of a disease promptly flashes in our minds the name of the causative germs. It is of interest to call attention to another cause that occupies a fairly prominent field.

To what extent the eye may be subject to localized anaphylactic phenomena and what part ocular tissues may play in such reaction:

1. The ocular tissues are affected through general sensitization or more so by ocular sensitization.

2. Correlation between such sensitization as may occur in life and the ocular diseases, or the relationship between ocular diseases and the science of immunology.

1. Conjunctiva. The conjunctivitides that appear to be related to immune reactions are the conjunctivitides that occur in relation to Hay Fever, Pollen and Food sensitiveness and phlyctenular diseases. Vernal conjunctivitis was studied in its various degrees of manifestation in 19 cases, 13 were improved by treatment with the pollen to which they were sensitive, thus indicating that Vernal Conjunitivitis is an allergic phenomena dependent upon pollen and food protein sensitivity, which sensitivity was claimed in a paper read before the Southern Medical Association in 1922.

2. Phlyctenular Kerato-Conjunctivitis—due to (a) vagus irritability caused by faulty carbohydrate metabolism, (b) ethmoid disease, (c) through an allergic reaction related to tuberculous infection—an antibody—antigen phenomenon or reaction.

Evidence in favor of:—1. In some T. B. cases phlyctenules may be produced by instillation of tuberculin in the conjunctival sac. 2. In patients hypersensitive to tuberculin its instillation in conjunctival sac has caused phlyctenules as a part of positive tuberculin reaction.

Why do phlyctenules develope in eyes of T. B. cases? Theory:—At some time there has been a minute T. B. focus in eye sensitizing it. The liberation of fresh T. B. material in such cases cause the development of the phlyctenules, such a reaction had been proved experimentally.

A similar allergic reaction may be ascribed in ethmoid disease and to absorption of metabolic products, but in these it is not easily proved.

An Anaphylactic Keratitis like an Interstitial Keratitis may also occur as in case report due to corn pollen. This may in part explain the occurence of Interstitial Keratitis in the second eye in a case under antisyphillitic treatment for the first eye. The theory has therefore advanced that Interstitial Keratitis develops from the absorption of syphilitic virus in the previous sensitized cornea. The same may be predicated about tuberculin Interstitial Keratides.

3. Crystalline Lens. The lens protein is organ specific and not species specific. Lens defect can be produced in the offspring of pregnant animals that have been sensitized with lens protein. Analagous to this is the endopthalmitis phacoanaphylactica first demonstrated by Verhoeff and Lemoine, that occurs as a result of absorbing lens after cataract extractions or in traumatic cataracts.

4. Uveal Tract. Presents sympathetic opthalmia as the principal disease due to immunological phenomena. From this we learn that normal healing of wounds involving the uveal tract is associated with the development of immunity against pigment. (When such does exist it can be produced). On the other hand sympathetic op-

thalmia is associated with a definite cellular hypersensitiveness to pigment.

Just as certain types of Arthritis may be allergic phenomena, so certain forms of uveal disease seem to have an allergic causation.

Having given the allergic causation Dr. Woods then briefly gives the diagnostic methods:—(1) Pollen sensitivity determining not the group, but the definite pollen at fault, that it may be used in desensitizing the patient, (2) Tuberculin Hypersensitivity is tested by the intractutaneous test by starting with 1-100,000 increasing to 1-100, (3) Wassermann—negative blood reaction means nothing in cases of optic neuropathy, (4) Lens protein—pigs lenses in powder for cutaneous tests is used as 10% by weight in normal saline for intradernal injection.

Comment: Proof is not present for some of the statements in this article of Dr. Woods', but this is the important fact—we are coming to realize the enormous role that allergy occupies in the progress of disease.

SOCIETY REPORTS

COLUMBIA MEDICAL SOCIETY IN MEMORIAN

Clarendon W. Barron, M. D.

Whereas in the Providence of Almighty God we have been called upon to mourn the death of a beloved member of the Columbia Medical Society.

Resolved:

That in the death of Dr. Clarendon W. Barron our Medical Society has sustained a great loss.

Resolved:

That he, in his daily life, spread sunshine and joy to the old and the young. His friends were from all walks of life. The rich and the poor both alike could approach him with the same ease and confidence. Children waved to him as he passed them on the streets. On hunting and fishing trips he made everyone feel the spirit of the sport. He stood in the front rank of the physicians of Columbia and of the State of South Carolina. He was especially loved by the young physician just beginning his professional struggle.

Resolved:

That we tender to the bereaved Wife, His Brothers and Sisters our sympathy: and that a page in our minute book be dedicated to his memory.

F. M. Durham, M. D.
Geo. H. Bunch, M. D.
Henry W. Rice, M. D.

Committee Representing the Columbia Medical Society.

PEDIATRICS

R. M. POLLITZER, M. D., GREENVILLE, S. C.

Leaving out of all consideration a few fanatics and those who are hopelessly ignorant of all medical science, it is generally admitted that in the past few decades there has been much real progress in medicine all along the line. Marked advance particularly in certain specialties as roentgenology, bio-chemistry and urology is clearly evident, while in the domain of therapeutics because of certain inherent difficulties apparently less has been accomplished. Perhaps the most valuable contribution have been made in preventive medicine. Especially is this true if visioned from the economic standpoint. We today can protect individuals more or less permanently from diseases against which formerly we were helpless. For the age-long dream of a therapsia magna has been slow of fulfillment, and we are more convinced than ever that prophylaxis is better than cure. Indeed there are but very few maladies that we can cure, though assuredly we can render aid or ameliorate the morbid condition many times. In an excellent article entitled "Reflections on Congenital Syphilis" (Amer. Jour. Dis. Child. 1924, 28:2. Aug.) Leonard Findlay after reviewing his experiences concludes that the only hope for the eradication of syphilis lies in its prophylaxis. He is satisfied that antenatal treatment is of great value. Veeder (ibid. p. 249) states, after checking up 434 cases of congenital syphilis which had been treated in his clinic, that treatment as a whole has been unsatisfactory, and that the only effective treatment has been preventive. Such being the case it would seem imperative that all pregnant women who have syphilis be treated as efficiently as possible, for the sake of the unborn baby.

Henry F. Helmholz writing on "Preventive Medicine and the Future of Medical Practice" (J. A. M. A. 83:7. Aug 16) asserts that "In no sphere of medicine does prevention play so large a part as inpediatrics? Vaccination which is so old a story that it is a hackneyed theme has saved the lives of thousands of individuals. Yet today a large number of people are not protected against small-pox until they enter the public school, even though this once dreaded disease is markedly on the increase and is steadily gaining in virulence. Physicians should urge parents to have their children vaccinated during the first year of life. It would be of interest to learn what percentage of doctors in getting a history ask whether the child has been vaccinated; and then if given a negative answer explain its importance.

Our near conquest of diphtheria by the injection of antitoxic serum is not entirely satisfactory, for the mortality still hangs around 10%, but with the use of the toxin-antitoxin mixture the disease can be prevented in 97% of individuals. Some schools are requiring of all pupils on entrance a certificate of immunity as shown by the Schick test or that they shall have been immunized. But this does not solve the problem, for diphtheria is largely a disease of the pre-school age. The procedure of administering the toxin-antitoxin is harmless, and the benefit great. Further in the very young the local reaction is less than in late childhood.

We doctors owe it to our patients that, in addition to obtaining the list of diseases the child has had, or the story of what foods the infant has been successfully or disastrously reared on; the matter of diphtheria prevention (and in the near future scarlet fever too) should be stressed. All mothers,

or fathers if at hand, should be made to realize that they must assume the responsibility should they fail to protect their offspring against diphtheria. No baby unless too ill should be permitted to reach its first birthday without having been immunized. Where the doctor fails to advise that steps be taken to prevent small-pox or diphtheria, should infection occur, he might be held as not having fulfilled his whole duty. For when one attends children, whether he calls himself a pediatrician or a general practitioner he necessarily should practice some preventive medicine. The prevention of the nutritional disorders, of postural defects, and of cardiac disease are but other phases of some of the many that come properly under the domain of one who not only drugs, but cares for the child.

UROLOGY

MILTON WEINBERG, M. D., Sumter, S. C.

EISENDRATH, DANIEL N.: CONGENITAL STRICTURES OF THE URETER. THE SURGICAL CLINICS OF NORTH AMERICA, JUNE 1924, P. 635.

Eisendrath states that we now realize the importance of ureteral strictures in the production of changes in the kidney and also in causing reflex symptoms especially to the bladder. He states that "the subject of ureteral stricture is perhaps the most actively debated one in the field of urinary surgery." They may be either congenital or acquired; the congenital ones being the result of defective development.

The writer classifies congenital affections of the ureter as follows:

1. Strictures.
2. Twists.
3. Valves.
4. Diverticula.
5. Dilatations without obstruction in the ureter, bladder, or urethra.

He thinks that the congenital strictures are in all probability due to imperfect canalization of the solid epithelial outgrowth from the wolffian duct, which represents the ureter in the embryo. By the fourth month, when the first urine passes through the ureter, canalization should be complete. It is not difficult to visualize the effect of a failure of one or more segments to be canalized. In this manner a narrowing or complete absence of the lumen can be readily understood. There are three points at which the ureter is normally narrowed than the remaining portion.

He states that congenital strictures are found after birth at one of the following locations or combinations.

(a) Close to the renal pelvis or to the bladder on one side of the body, at the levels where narrowings of the normal ureter occur most constantly.

(b) At one of the levels referred to in (a), but on both sides of the body. All possible combinations have been reported.

(c) Bilateral stricture at about the same level. These are most common at or close to the vesical end of the ureter, often giving rise to a condition known as cystic dilatation of the ureter.

(d) Stricture at the vesical end of one or both of the ureters of a double kidney usually with a blind ending and protrusion at the normal location of the ureteral orifice or elsewhere in the bladder, usually close to the internal meatus.

Twists or torsion of the ureter usually occur in the middle or upper thirds of the ureter. It may be present in a normal person to a slight degree, and give rise to

clinical symptoms when the lumen is more or less completely occluded.

Valves are found in about 20 per cent of all individuals and occur at any level. They seldom if ever give rise to any obstruction.

Diverticula may occur either singular or multiple and play an important role clinically if the seat of an infection or point of lodgment of a calculus.

Idiopathic dilatations of the ureter not infrequently occur.

The writer is of the opinion that a study of the pyelitides of children with the aid of uretero-pyelography is warmly urged in order to avoid overlooking a possible congenital stricture as the factor which favors the persistence of the infection. The clinical pictures do not differ from those of ureteral stricture of acquired origin, namely, pain the predominant symptom; fever and other signs of renal infection; abnominal tumor; intravesical protrusion of the lower end of the ureter (cystic dilatation). The treatment of these strictures does not differ from that of the acquired type, with the exception of the cystic dilatation. The protrusion should be opened with the aid of the high-frequency current; open surgical procedures are contraindicated and unnecessary. In one of his cases the protrusion from cystic dilatation completely filled the lumen of the bladder giving rise to urinary retention. In another case the prolapse extended through the urethra appearing at the vulva. The diagnosis of cystic dilatation in general depends upon the cystoscopic examination.

-:- NEWS ITEMS -:-

REQUIRE EQUALLY HIGH QUALIFICATIONS OF ALL WHO PRACTICE MEDICINE

Statistics pubished this week show that the medical schools of the United States are training physicians in accordance with the present-day extensive knowledge of medicine. The turning out of well trained physicians is only one factor, however, in securing for the public the benefits of modern scientific medicine: adequate legal restrictions must be provided against ignorant or inadequately trained doctors. Such legal restrictions, indeed, have now been established in all but eight states [1] for those generally regarded as "physicians," since medical practice laws in most states have established for physicians the educational standards adopted by our better medical schools. Unfortunately, however, under various pretexts and by persistent hammering at legislatures, cultists of various types have obtained legal authority to treat the sick on qualifications lower than those required of physicians. These irregular practitioners assume a personal responsibility for the care of the sick and act as substitutes for the physician; and, since they do not have the physician's qualifications either educationally or professionally, they practice under false pretenses, and are a menace to the health and lives of their patients. As medical science has advanced during the last few decades, this menace has been constantly increasing. Delicate and highly technical procedures are being employed in the treatment of disease which, in the hands of unskilled or ignorant practitioners, are exceedingly dangerous to the patient. Modern medicine also has brought out a specific treatment for each of several diseases, and a failure to use this treatment may result in disaster to the patient. It is time that the dangers from untrained or incompetent practitioners should be generally recognized and that medical laws should be strengthened to safeguard the public against them. The legal

phases of this problem have been clearly presented [2] by Harry Eugene Kelly of the Chicago bar, who supports his statements with an array of court decisions that greatly add to their force. In the eyes of the law, according to Kelly, the word "physician" includes every one who assumes the responsibility for the care of the sick and the injured; furthermore, the educational and professional qualifications required of physicians should apply with equal force to all who are granted legal authority to practice the healing art. The training given in medical schools has not yet reached perfection, but medical students are now being given a far better knowledge of the causes and treatment of diseases than was possible twenty or more years ago. The greatest problem of today is how to secure for the entire public the widest possible benefits of modern scientific medicine. An important step toward the solution of this problem would be the adoption in all states of laws requiring reasonable educational qualifications of all who are to practice medicine.

—*Jour. A. M. A.*, Aug. 16, 1924.

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